CLAIMS

We claim:

1. A targeting construct comprising:
   (a) a first polynucleotide sequence homologous to a tryptase gene;
   (b) a second polynucleotide sequence homologous to the tryptase gene; and
   (c) a selectable marker.
2. The tryptase targeting construct of claim 1, wherein the targeting construct further comprises a screening marker.
3. A method of producing a targeting construct, the method comprising:
   (a) providing a first polynucleotide sequence homologous to a tryptase gene;
   (b) providing a second polynucleotide sequence homologous to the tryptase;
   (c) providing a selectable marker; and
   (d) inserting the first sequence, second sequence, and selectable marker into a vector, to produce the tryptase targeting construct.
4. A method of producing a targeting construct, the method comprising:
   (a) providing a polynucleotide comprising a first sequence homologous to a first region of a tryptase gene and a second sequence homologous to a tryptase gene;
   (b) inserting a positive selection marker in between the first and second sequences to form the targeting construct.
5. A cell comprising a disruption in a tryptase gene.
6. The cell of claim 5, wherein the cell is a murine cell.
7. The cell of claim 6, wherein the murine cell is an embryonic stem cell.
8. A non-human transgenic animal comprising a disruption in a tryptase gene.
9. A cell derived from the non-human transgenic animal of claim 8.
10. A method of producing a transgenic mouse comprising a disruption in a tryptase gene, the method comprising:
   (a) introducing the targeting construct of claim 1 into a cell;
   (b) introducing the cell into a blastocyst;
   (c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(d) breeding the chimeric mouse to produce the transgenic mouse.

11. A method of identifying an agent that modulates the expression of a tryptase, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in a tryptase gene;

(b) administering an agent to the non-human transgenic animal; and

(c) determining whether the expression of tryptase in the non-human transgenic animal is modulated.

12. A method of identifying an agent that modulates the function of a tryptase, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in a tryptase gene;

(b) administering an agent to the non-human transgenic animal; and

(c) determining whether the function of the disrupted tryptase gene in the non-human transgenic animal is modulated.

13. A method of identifying an agent that modulates the expression of tryptase, the method comprising:

(a) providing a cell comprising a disruption in a tryptase gene;

(b) contacting the cell with an agent; and

(c) determining whether expression of the tryptase is modulated.

14. A method of identifying an agent that modulates the function of a tryptase gene, the method comprising:

(a) providing a cell comprising a disruption in a tryptase gene;

(b) contacting the cell with an agent; and

(c) determining whether the function of the tryptase gene is modulated.

15. The method of claim 13 or claim 14, wherein the cell is derived from the non-human transgenic animal of claim 8.

16. An agent identified by the method of claim 11, claim 12, claim 13, or claim 14.

17. A transgenic mouse comprising a disruption in a tryptase gene, wherein the transgenic mouse exhibits at least one of the following phenotypes: decreased body

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weight, decreased thymus weight, decreased thymus to body weight ratio, or increased pre-pulse inhibition as compared to wild-type mice.

18. The transgenic mouse of claim 17, wherein the body weight is a decrease of 20 % in female transgenic mice as compared to female wild-type mice.

19. The transgenic mouse of claim 17, wherein the body weight is a decrease of 15% in female transgenic mice as compared to female wild-type mice.

20. A method of producing a transgenic mouse comprising a disruption in a tryptase gene, wherein the transgenic mouse exhibits at least one of the following phenotypes: decreased body weight, decreased thymus weight, decreased thymus to body weight ratio, or increased pre-pulse inhibition as compared to wild-type mice, the method comprising:

(a) introducing a tryptase gene targeting construct into a cell;

(b) introducing the cell into a blastocyst;

(c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(d) breeding the chimeric mouse to produce the transgenic mouse comprising a disruption in a tryptase gene.

21. A cell derived from the transgenic mouse of claim 17 or claim 20.

22. A method of identifying an agent that ameliorates a phenotype associated with a disruption in a tryptase gene, the method comprising:

(a) administering an agent to a transgenic mouse comprising a disruption in a tryptase gene; and

(b) determining whether the agent ameliorates at least one of the following phenotypes: decreased body weight, decreased thymus weight, decreased thymus to body weight ratio, or increased pre-pulse inhibition as compared to wild-type mice.

23. An agent identified by the method of claim 20 or claim 21.

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